

<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/722,223	SPICKERMANN ET AL.
	Examiner	Art Unit

Brian M. Healy 2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to the application filed 11/25/2003.
2.  The allowed claim(s) is/are 1-9.
3.  The drawings filed on 25 November 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
 of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

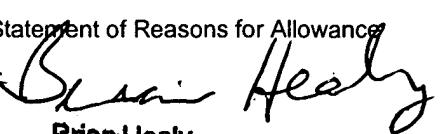
\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material.
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_

  
 Brian Healy  
 Primary Examiner

**REASONS FOR ALLOWABILITY**

The following is an Examiner's Statement of Reasons for Allowance: The closest prior art of record, i. e., Asher, U.S.P. No. 5,737,102 teaches (Figs. 1-3) an optically induced digital logic gate and method of using same comprising: using pump signals ( $\lambda_p$ ) on non-linear material in gates 102,104 in order to induce a switched output 110 which acts as an optical logic gate. Asher (or any of the other prior art references of record) neither teaches or suggests the claimed optical apparatus comprising: a constant wave (CW) laser source; a digitally modulated pump laser source and a first cross-junction waveguide optical switch having a first optical input for receiving light from the CW laser source, a second optical input for receiving the first optical input pump signal, a first optical output for outputting a digital copy of the first optical input pump signal, a second optical output for outputting an inverted copy of the first optical input pump signal, and wherein the first optical input CW signal is controllably directed to the first or second optical outputs as a result of total internal reflection within the optical switch that is optically induced by the digitally modulated light output by the pump laser source. These limitations are recited in claim 1 and are patentable over the prior art of record. Independent claim 8 has the limitations of claim 1 with additional limitations second third and fourth optically switches, an additional second CW laser source with the aforementioned device functioning as a S-R latch device. Independent claim 9 includes all of the limitations of claim 1 with additionally recited 10 switches which are orientated to function as NAND gates thereby forming an

optical binary memory cell. (See independent claims 8 and 9 for specific details). Claims 8 and 9 are patentable over the teachings of Asher and all of the prior art of record. Dependent claims 2-7 includes the limitations of claim 1 along with additional limitations of additional switches which form NAND gates (See dependent claims 2-7 for specific details). Thus, claims 1-9 are considered patentable over the teachings of Asher and all of the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. §§ 102(e), (f) or (g) prior art under 35 U.S.C. § 103(a). The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Meyer, U.S.P. No.3,588,749 (Figs.1-9), Asher et. al., U.S.P. No. 5,452,123 (Figs.1-4), Hicks, U.S.P. No. 4,789,843 (Figs.1-8), Pratt, Jr. et. al., U.S.P. No. 4,382,660 (Figs.1-27), Bialkowski,

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U.S.P. No. 4,585,301 (Figs.1-7), Vahala et. al., U.S.P. No. 6,151,428 (Figs. 1-16) and Barnes et. al., U.S.P. No. 5,295,010 (Figs.1-7).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian M. Healy whose telephone number is (571)272-2347. The examiner can normally be reached on Compressed schedule Tues.-Thurs. 7AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571)272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Brian M. Healy  
Primary Examiner  
Art Unit 2883**

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**Brian M. Healy  
Primary Examiner**